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VICTORY GARDEN *Handbook*



**A Guide for Victory Gardeners in New York and
Neighboring States. INDEX INSIDE FRONT COVER.**

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The purpose of this handbook is to teach the principles of gardening under the Victory Gardening Program

—≡ INDEX ≡—

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VICTORY GARDEN HANDBOOK

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Introduction

PURPOSE OF VICTORY GARDEN PROGRAM:

The government is taking increasing quantities of food for the armed forces and lend-lease shipments. The supply of meat, dairy products and canned fruits and vegetables for civilians is sharply curtailed. With farms producing food at maximum capacity, the increased food demand can best be met by means of Victory gardens in villages, suburban areas, and in cities.

Vegetables produced in the backyard or in community gardens will add greatly to the nation's supply of nutritious food. Victory gardens help to relieve shortages of farm labor, containers, and transportation facilities, and indirectly they help to feed our soldiers and allies on the battle front. Every hour spent on raising vegetables is time devoted to the fight for freedom.

HOW THE VICTORY GARDEN PROGRAM OPERATES:

Secretary Wickard has asked for 18,000,000 Victory Gardens in 1943. To achieve this goal, federal and state programs are being developed. With experience gained in 1942, New York State has set up an organization which will reach every gardener in city and country. An attempt will be made to find suitable garden plots for all those who wish to take part in the program. Information on recommended practices will be made available through courses on gardening open to the public, through leaflets and through clinic gardens in individual communities.

WHAT IS THE ADVANTAGE OF HAVING YOUR OWN GARDEN?

Bread and cereals are the only food products of which there will be an ample supply in 1943. The supply of all other foods is limited and many are now rationed. To maintain an adequate and balanced diet, many people will have to change their food habits. Garden vegetables, more than any other kind of food, can serve as a substitute for meat, fats and canned foods because vegetables in themselves are a well-balanced source of nutrients. As a group, they contain a high proportion of minerals and vitamins, they furnish energy and the necessary roughage. Vegetables fresh out of the garden or canned at home will be a welcome supplement to food allotted under the rationing system. No matter how small the allotment of other foods, with a garden full of vegetables you can be assured that your family will be fed adequately. Other advantages of a home garden are these: It gives school

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children an opportunity to take part in the war effort; for many adults an hour's work in the open means healthy recreation after a day spent in the shop or office; many a beginner will find it a thrill to grow his own food.

WHO SHOULD HAVE A GARDEN?

Anyone who has a suitable plot of land, a willingness to work in the garden a few hours each week and sufficient perseverance should be encouraged to grow his own vegetables. There is nothing complicated about planting and cultivating a small garden. Practical advice will be given to anyone who needs it. Experience has shown that beginners often have better gardens than old-timers because they are conscientious in following advice given to them.

A garden needs attention throughout the summer. It is not merely a question of planting in the spring and harvesting in the fall. The best gardens are usually had by those who can attend to their crops every few days. Weekend gardens may be successful, but if it should happen to rain on two successive weekends, there is danger that weeds will get a head start and that insects will do much damage before the end of the third week.

WHAT IS A SUITABLE PLOT FOR GARDENING?

Gardens can be grown on a wide variety of soils varying from a light sandy soil to a heavy clay. Sandy soils may suffer from drought and clay soils must not be worked when they are wet. The gardener will soon learn to take advantage of the characteristics of his soil.

Some unproductive soils can be built up by adding organic matter in the form of manure or compost, others need only lime and fertilizer. Before adding lime, make sure that your soil needs liming. Many soils in the State already are too sweet; adding more lime to them does more harm than good. People who may be in a position to make a rapid test to check the lime requirements of your soil are the following:

- (1) The 4-H Club Agent
- (2) The County Agricultural Agent
- (3) Teacher of vocational agriculture
- (4) Science teacher at the local high school

Poorly drained soils where water stands in puddles for hours after a heavy rain usually are unsuited for gardening. The surest way to find out whether soil in a given area is suitable for gardening is to inquire from neighbors whether or not successful gardens have been grown in the immediate vicinity.

Too much shade eliminates many city plots from consideration as garden spots. To grow well, most vegetables require a minimum of 8 hours of sunlight. Areas shaded part of the day by tall buildings and trees are unsatisfactory. Roots from tall trees along the garden may deprive the crops of nutrients and moisture. Tree roots usually extend from the base of the tree to a distance which is equal to its height.

LOCATION AND SIZE OF THE GARDEN:

Few people have land to choose from in selecting a garden site. Usually it is merely a question of having a garden in the backyard or going without one. In some cities arrangements are being made for community garden plots within reach of bus or trolley lines.

A garden close to the house usually gets better care and is of greater service in providing for the family than a plot several blocks away. There is no lower limit to the size of a garden. Even a few rows of lettuce, beans and carrots on a sunny spot in the backyard will be appreciated this year. On a plot 20 x 40 feet it should be possible to provide a family of 3 or 4 with a variety of vegetables from the end of May until November. To provide a family of four with enough vegetables for canning and storage, the garden should measure at least 50 x 100 feet. Some people, especially those with a large family can solve their problem by raising a few fresh greens in the backyard and growing in a community garden those crops that require a good deal of space as well as vegetables for canning and storage.

Gardeners, especially beginners, should be warned against having a garden larger than they can take care of. A small garden, well cared for, produces more food than a large one overgrown with weeds. It is estimated that a garden of 50 x 100 feet requires about 5 hours of work each week, once the ground has been prepared and the first plantings have been made. Of course, much more time is needed in spring to get the seed bed ready. If the garden is to be spaded instead of being plowed, the gardener had better start as soon as the ground can be worked. After a little practice, one man should be able to spade an area of 100 square feet in one hour's time.

PLAN A VICTORY GARDEN TO FIT YOUR NEEDS



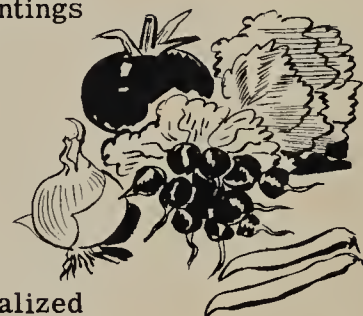
WHAT VEGETABLES TO PLANT?

What crops to plant depends largely on the size of the garden and to some extent on the size of the family. On a plot of, let us say, 20 x 40 feet only those crops should be grown that require little space or which mature rapidly so as to make room for second plantings in late summer. Crops of this type are the following:

Spinach
Leaf lettuce
Swiss chard
Kohlrabi
Onions

Snap beans
Summer squash
Tomatoes
Kale
Radishes

Chinese cabbage
Early beets
Early carrots
Early cabbage
Broccoli



In a somewhat larger garden, the following crops may be added. It should be realized that they are somewhat wasteful in space, but they will greatly add to the variety on the dinner table:

Peas
Sweet corn
Winter squash
Early potatoes
Lima beans

Parsnips
Turnips
Rutabagas
Endive
New Zealand spinach

Soybeans
Tomatoes
Snap beans
Spinach

} for canning



Only if you have a large garden is it worthwhile to grow peas and sweet corn for canning. Crops which can be grown for winter storage if space permits are:

Carrots
Beets
Rutabagas
Kohlrabi

Turnips
Parsnips
Salsify
Danish cabbage

Red cabbage
Savoy cabbage
Chinese cabbage
Onions
Squash



There are a few crops which require special care and need close watching for diseases and insect pests. They are recommended only to those who already have considerable experience in gardening. Crops of this kind are:

Muskmelons
Watermelons

Celery
Cauliflower

Brussels sprouts
Eggplants
Potatoes



WORK OUT A GARDEN PLAN ON PAPER:

Whether you have a small or a large garden you need a carefully worked out plan. Keep the plans you followed from year to year together with notes on changes that you want to make in the future.

To get started the beginner had best take either one of the following suggested plans and make changes to suit his own needs.

Plan for a Small Garden (20x40 ft.)

12"	Spinach _____	} followed by late cabbage (12 plants) and _____
12"	Leaf lettuce - 1. Planting _____	
12"	Beets _____	followed by Chinese cabbage _____
12"	Carrots - 1. Planting intersown with radished - followed by late spinach _____	
18"	Onions _____	
18"	Swiss Chard (1/2 row) Kohlrabi 1/2 row - Kohlrabi followed by lettuce _____	
18"	Carrots - 2. Plantings _____	
18"	Leaf Lettuce - 2. Plantings _____	
24"	Snap Beans - 2. Plantings _____	
30"	Snap Beans - 1. Planting _____	followed by Kale _____
30"	Tomatoes (10 Plants) _____	
24"	Early Cabbage (12 Plants) Broccoli (8 Plants) _____	
12"		

20 feet

Lay Out Your Plan for a Small Garden (20x40 ft.)

20 feet

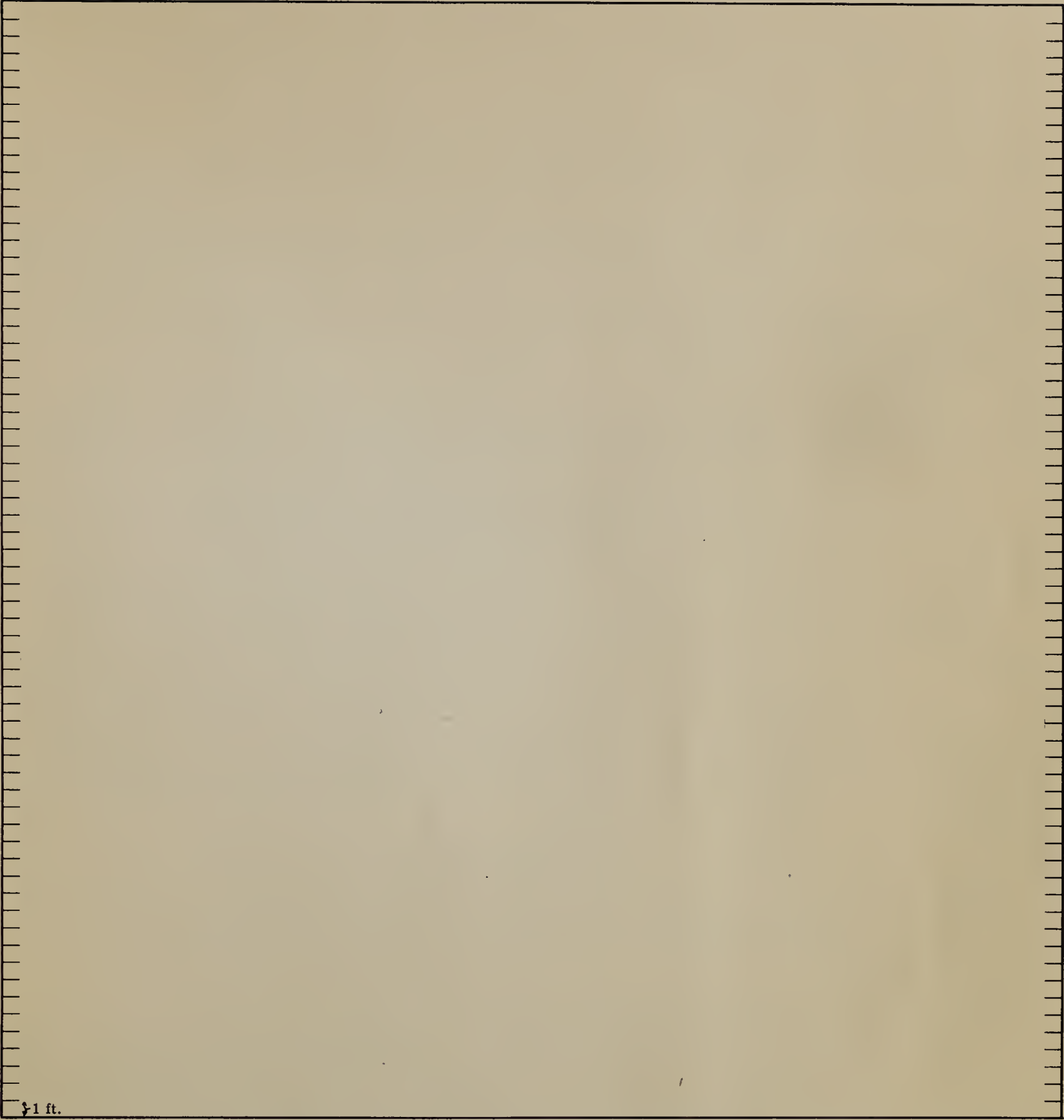
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Plan for a Medium-Sized Garden (65x80 ft.)

12"	Peas, Early Variety		
24"	Peas, Early Variety	}	
24"	Peas, Midseason Variety		After these crops have been harvested-plant one
24"	Peas, Midseason Variety		row each of lettuce-spinach-beets-snap beans
18"	Spinach - 1. Planting		1/2 row each of broccoli,
18"	Lettuce - 1. Planting		Chinese cabbage and turnips.
18"	Early Beets - 1/2 row	Kohlrabi - 1/2 row	
18"	Carrots - 1. Planting with few radishes to mark row - 2/3 row Swiss Chard 1/3 row		
18"	Parsnips - Parsley - 5'		
18"	Onions - Sets or Plants		
24"	Broccoli - 1/2 row	Early Cabbage 1/2 row	} Replant with 2 rows of Kale. If mulched this will last until zero weather.
30"	Snap Beans - 1. Planting		
30"	Tomatoes - Summer Squash - 3 plants only		
48"	Tomatoes		
60"	Eggplants 1/2 row - Peppers 1/2 row		
24"	Lettuce - 2. Plantings		
18"	Carrots - 2. Plantings		
24"	Rutabagas 2/3 row - Turnips 1/3 row		
30"	Snap Beans - 2. Plantings		
36"	Late Cabbage (Danish)		
36"	Late Sweet Corn - 1- Planting		Late Sweet Corn - 2. Plantings
36"	Late Sweet Corn - 1. Planting		Late Sweet Corn - 2. Plantings
36"	Late Sweet Corn - 1. Planting		Late Sweet Corn - 2. Plantings
36"	Early Sweet Corn		Midseason Sweet Corn
36"	Early Sweet Corn		Midseason Sweet Corn
36"	Early Sweet Corn		Midseason Sweet Corn
36"	Winter Squash - Train Vines into Early Corn		
12"			

65 feet

Lay Out Your Plan for a Medium-Sized Garden (65x80 ft.)



The second plan is designed to supply a family of three or four with enough vegetables for the entire year. For canning, there will be peas, snap beans, tomatoes, and possibly sweet corn. Enough root crops, cabbage, onions, and squash, have been added to have a supply for winter storage.

In making the necessary changes, observe the following rules:

- (1) Adjust the length of rows and their number to the actual size of the garden. Take also into account the size of the family, personal likes and dislikes, and the quantity wanted for canning and storage.
- (2) Keep tall-growing crops (sweet corn, staked tomatoes, cabbage and broccoli) away from small ones (spinach, lettuce, beets, carrots, etc.).
- (3) Divide into two or more plantings those crops which mature rapidly and pass their edible stage in a short time. Crops that require succession plantings are:

Snap beans	Beets	Lettuce
Carrots	Spinach	Kohlrabi
- (4) Plan the order of crops in the garden so that rows of early-sown and quickly maturing crops are in one block (peas, spinach, early carrots, early snap beans). In July the ground can be refitted for planting a fall crop.
- (5) If you plan to have perennials (asparagus, rhubarb, or herbs) locate them along one side of the garden where they interfere least with plowing. Better still, have perennials in a separate garden together with small fruits.



Suggested planting distances between rows of the same vegetables are as follows:

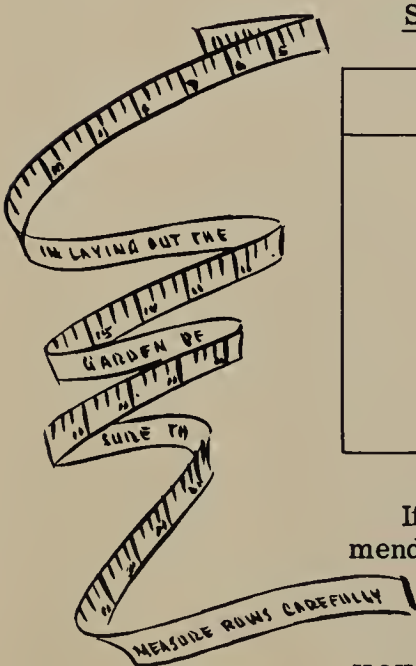
12-18 inches	24-30 inches	30-36 inches	48-72 inches
spinach lettuce beets carrots onions kohlrabi endive parsnips turnips	peas snap beans lima beans Chinese cabbage kale rutabagas peppers eggplants Swiss chard	broccoli cabbage cauliflower sweet corn early potatoes summer squash	tomatoes cucumbers winter squash muskmelons watermelons

If rows requiring different spacings adjoin each other, use the average distance recommended for these crops.

HOW TO MAKE OUT A SEED ORDER:

The supply of garden seeds is fairly good. Nevertheless, with a large increase in city and suburban gardens a shortage of seeds may develop before the planting season gets under way. Certainly, many gardeners will be unable to get the particular varieties they had counted on. To meet this situation, every Victory gardener is urged to order no more vegetable seed than he absolutely needs. Also, he should sow as thinly as possible. Most gardeners sow too much seed which makes for needless labor later on. Thin sowing, therefore, serves two purposes.

Knowing how many feet of row of each vegetable are to be planted, the quantity of seeds to order can easily be calculated. Most seed catalogues tell how many feet a packet of an ounce will sow. A packet of small-sized seeds is usually sufficient to sow 50 feet of row. Remember that the same quantity of seed bought in packet lots cost roughly twice as much as seed in quantities of 1/2 ounce or one ounce. Do not forget to order enough seed to cover the needs for second plantings later in the summer.



CROPS FOR WHICH NO SEEDS NEED TO BE ORDERED:

Although some people advocate that gardeners grow their own plants, such as tomatoes, cabbage, and broccoli, few gardeners have the experience or the facilities to grow stocky plants that withstand the shock of transplanting. Even a person with much experience will find it difficult to grow sturdy plants in the house on the window sill. The room is usually too warm and there is insufficient light; the plants are, therefore, spindly and weak. If you have a coldframe or hotbed and know how to do the job, by all means grow your own plants. This year many growers, florists, and nurserymen have made plans to grow vegetable plants for sale to Victory gardeners throughout the State, and there should be an ample supply of them. Plants which are usually transplanted are the following:



Early cabbage
Broccoli
Sweet Spanish onions

Tomatoes
Peppers
Eggplants

Muskmelons
Watermelons

Using onion sets instead of onion plants makes transplanting unnecessary. Muskmelons and watermelons can be started from seed under hotcaps in the garden.

WHAT VARIETIES TO CHOOSE:

Suggestions as to the choice of varieties are found in the Cornell 1943 Victory Garden leaflet No. 1 and also in seed catalogues, most of which point out particular varieties best suited for home gardens.

In choosing varieties, make sure that the particular one selected will have sufficient time to mature in your locality. In the northern part of New York, for instance, Rutgers tomatoes and pole lima beans usually mature too late for a good yield.

Other suggestions are these: Hybrid sweet corn and hybrid summer squash give higher yields than the old standard varieties. Many gardeners prefer round podded bush beans, such as Tendergreen to flat podded varieties. Pole beans, Scotia or Kentucky Wonder probably have the highest quality. Growing pole beans has also the advantages of economy of space and of giving a steady supply of tender beans until the frost kills the vines.

SPACING HARVEST DATES BY CHOOSING TWO OR MORE VARIETIES:

The plantings of some crops, notably peas and sweet corn, yield produce for the table for a period of a week or ten days only. To stretch the harvest period, one can either make successive small plantings, or sow at one time two or more varieties, one of which matures early and the others a week or two later. The latter practice is recommended especially for peas.

WHERE TO BUY SEED AND PLANTS?

It matters little where you buy your seed. Gardeners in New York State are fairly well protected against seed of low germination by stringent seed laws which require dealers to stamp each package with the results of a germination test. It is advisable to get all your seeds early and to obtain them from a firm that handles varieties suitable for New York State.

If you have seed left over from last year, the chances are it is still good to use the coming season. To make sure, you can make a simple germination test by sprouting 50 or 100 seeds between moist blotting paper. If 70% or more of the seeds germinate, it is safe to use them, but, depending on the outcome of the test, you may have to sow a little thicker. Parsnip and onion seeds are the only ones likely to lose their germinating power quickly.

To obtain good sturdy plants, it is wise to place your order with a local grower or florist now. Tell him the number and kinds of plants you want, allowing for a few extra plants to replace those that may die after transplanting. If there is a choice among varieties of early cabbage plants, get a few plants each of Golden Acre and Copenhagen. There is about two weeks' difference in the date at which these varieties mature and this will help to spread the harvest season.

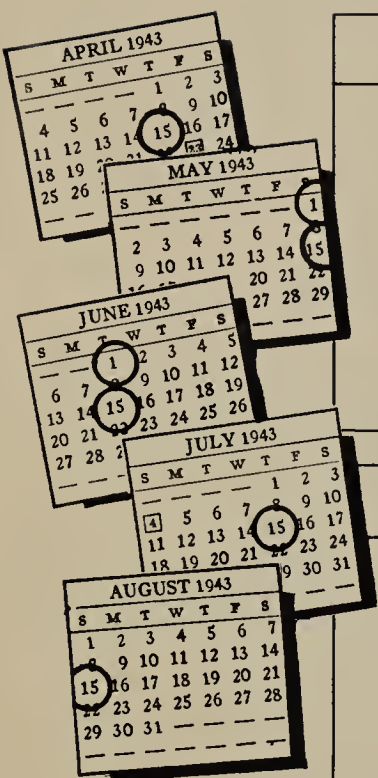
PLANTING SCHEDULE:

Too many gardeners plant most of their crops at one time with few additional plantings during the summer. The result is that they have more than they can eat in midsummer and



too little the remainder of the season. By following a carefully planned planting schedule, the return from the home garden can easily be doubled.

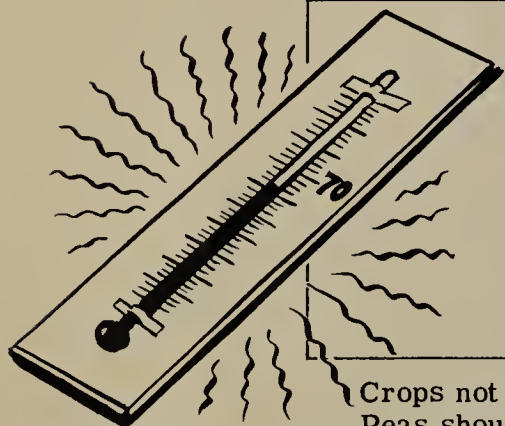
For gardeners in Central and Western New York the following schedule is suggested:



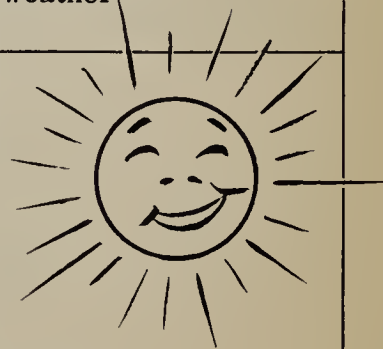
April 15 - May 1	May 1 - May 15	May 15 - June 1
peas, early and late varieties spinach 1. pl. lettuce 1. pl. early beets early carrots kohlrabi onion seeds or sets	onions (plants) broccoli 1. pl. early cabbage snap beans 1. pl. parsnips spinach 2. pl. Swiss chard sweet corn, early and late varieties 1. pl. early potatoes	tomatoes summer squash peppers eggplants muskmelons cucumbers lettuce 2. pl. lima beans
June 1 - June 15	June 15 - July 15	July 15 - Aug. 15
sweet corn 2. pl. snap beans 2. pl. New Zealand spinach winter squash rutabagas	carrots 2. pl. sweet corn 3. pl. late cabbage broccoli 2. pl. cauliflower snap beans 3. pl.	late beets turnips Chinese cabbage spinach 3. pl. lettuce 3. pl. endive kale

In northern New York and in regions of high elevation the growing season is about one month shorter, in the lower Hudson Valley and on Long Island it is at least a month longer than in Central or Western New York. To meet local climatic conditions, some adjustments have to be made in the suggested planting schedule.

It is a mistake to think that all vegetables require hot summer weather to grow well. As a matter of fact, most of them do better when it is moderately warm and some need distinctly cool weather to produce maximum yields.



Crops which do well only at an average temperature below 70° F.	Crops which withstand hot summer weather
peas head lettuce spinach cauliflower Brussels sprouts kale	sweet corn lima beans snap beans tomatoes peppers eggplant cucumbers melons Swiss chard New Zealand spinach



Crops not listed in the preceeding table grow best when the weather is moderately warm. Peas should be sown as early as possible in the spring. They are hardy and even a late snow does them no harm. They require 9-10 weeks to mature and must be ready before hot July weather sets in.

Spinach, head lettuce, and kale can be grown as a spring crop and again in the fall when the weather has become cool. If the plantings of fall greens are made extra large, they will last until November or December. A light mulch of straw or leaves will protect them against severe frost.

Cauliflower grown as a spring crop rarely produces good heads except in the mountainous regions in the State or on Long Island. Similarly, peas grown in the fall usually produce a light crop only.

During midsummer we have to rely on Swiss chard, New Zealand spinach, and endive as a source of fresh greens. These crops withstand hot weather reasonably well.

Note that late beets and Chinese cabbage are not to be planted before July 15, otherwise the beets become tough and woody and Chinese cabbage goes to seed.

Do not plant tender vegetables nor set out tender plants before danger of a late frost has disappeared. Too many gardeners are fooled every year by a few hot days in early May.

Crops which are injured by frost are:

tomatoes
eggplants

melons
snap beans

peppers
summer squash

cucumbers
lima beans
sweet corn



PREPARING THE SOIL FOR PLANTING

PLOWING OR SPADING THE GARDEN:

This year there will be few farmers who have the time for plowing the gardens of others. Local Victory Garden Committees should make every attempt to arrange with farmers, landscape gardeners or dealers of farm equipment for plowing large areas intended for community gardens by means of tractors. Some gardeners will be able to secure a team for plowing as they have in the past, but the majority of backyard gardeners will have to decide between spading or being without a garden altogether.

HOW TO SPADE A GARDEN THE EASY WAY:

Many people make the job of spading more difficult than it needs to be. The job can be made easy by observing a few simple rules:

(1) Remove trash and tall weeds before spading. Long, dry grass can be burned off, but if you do that, be sure not to endanger buildings nearby. Never start a grass fire without having several people equipped with water pails and old brooms to control the fire.

(2) On heavy soils wait until the ground has dried off enough so that the soil falls readily apart when struck gently with the spade after it has been turned over. But do not wait too long; once heavy soils become too dry it becomes almost impossible to spade them.

(3) Spade sod before the grass begins to grow. Green sod is very difficult to spade. Make sure that each spadeful is turned over completely. After spading is completed, no grass should be showing on the surface.

(4) On stony and shallow soils use a spading fork. On other types of soil take your choice between a blade spade or spading fork.

(5) Starting at one end of the garden, first make a wide furrow and scatter the dug soil behind you. Working backwards, keep a furrow of 6 or 10 inches so that you do not have to lift soil already turned over. If manure, compost, or dried sewage sludge is to be turned under, spread the material evenly over the area before spading. Then, each time a new furrow has been dug, scrape the material into the bottom of the furrow so that it will be covered completely in turning over the next row.

(6) It is not necessary to spade the entire garden in one evening. Spade up first enough ground to plant peas, spinach, and lettuce, leaving the remainder of the garden to be spaded a few days later.

After your muscles have hardened a bit, you should be able to spade 100 to 200 square feet in an hour. That means a garden 20 x 40 feet in size can be spaded in about five hours. Make this your goal!

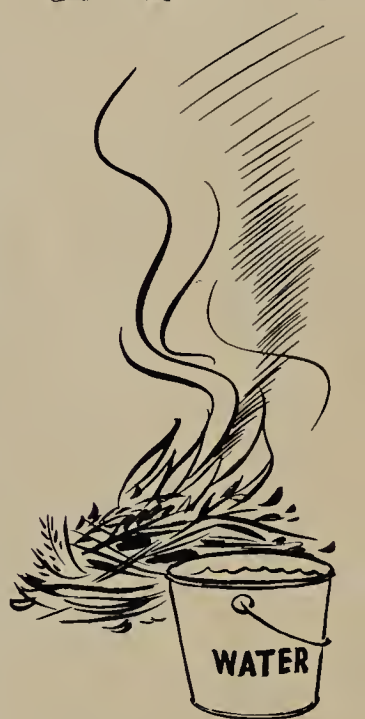
WHAT ABOUT PLOWING?

If you are lucky enough to engage someone to plow your garden with a team, make sure that he does a good job. Each strip of soil should be cut off the bottom and turned over completely. A garden in which the strips stand on edge makes a poor seed bed. Manure, compost, and sewage sludge should be spread evenly over the entire area and be plowed under so as not to leave ragged bunches of straw sticking above ground.

Even a good plowman cannot do a good job in a small city garden hemmed in between houses or hedges. It means turning around many times and the plowed ground is packed down along the edges or corners. Such small spots had better be spaded by hand.

WHEN TO PLOW OR TO SPADE:

Heavy loam and clay soils have to be watched carefully so that they will be plowed at just the right time. Plowed a few days too early, that is, when still too wet, they will leave big, hard lumps on the surface. If plowing of heavy soils is delayed too long, it becomes difficult to hold the plow in the furrow and the soil breaks up in chunks.





The best way to tell whether the soil is ready to be plowed is to dig up a handful, form it into a ball and press it together. If the soil is plastic, acting like putty, it is still too wet; if it crumbles and falls apart, go ahead with plowing.

Heavy soils may be spaded several days before they are ready to be plowed. However, they must have dried enough so as not to be sticky. Avoid stepping on the ground that has just been spaded as long as it is still somewhat wet.

SPREAD MANURE ON THE GARDEN IF YOU CAN GET IT!

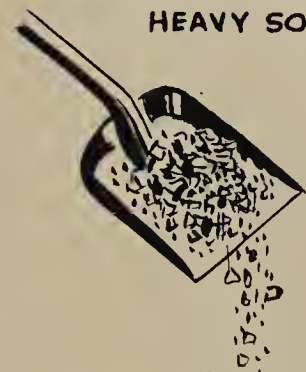
Practically all garden soils are improved by adding organic matter. Manure is by far the best source because it also adds plant nutrients. Any type of manure may be used. Chicken manure (mixed litter and droppings) adds more nitrogen to the soil than other kinds and should not be spread thicker than 10 pounds per 100 square feet, otherwise it may cause burning of the young plant.

Manure containing a high proportion of undecomposed straw should not be plowed under in spring. If you do, this is what happens: Millions of bacteria become active, multiply, and gradually chew up the straw. In developing, these bacteria use up a lot of nitrogen which is taken out of the soil. Thus, a good share of the nitrogen remains locked up by the bacteria for many weeks, depriving the plants of this all-important nutrient.

Some gardeners put the blame for a weedy garden on manure they used. No doubt a good many weed seeds are carried into the garden by manure, but it is safe to say that a far greater portion of the weed seeds comes from weeds left to mature in the garden the previous year. This is proven by the fact that weed seeds commonly found in manure are not the kinds that give most of the trouble in the garden. At any rate, the advantages from using manure far outrank the trouble caused by weed seeds.

This year it is especially important to use manure on the garden whenever available. Well decomposed manure contains much nitrogen. But the commercial fertilizer available to home gardeners contains only three per cent and even with heavy applications it leaves many soils deficient in nitrogen.

COAL ASHES LOOSEN
HEAVY SOIL



OTHER SOURCES OF ORGANIC MATTER:

Every gardener should have a compost pile on which to dump garden plants after they have been harvested and leaves raked off the lawn. Watering the pile occasionally speeds up the process of decomposition. When partly decomposed, the pile is turned over once or twice and spread on the garden the following year. It is bad practice to dump tall weeds with well-developed seeds onto the compost pile unless the pile is turned over several times and left to rot 2 or 3 years.

Peat moss is an excellent source of organic matter, but it is expensive and difficult to obtain. If available, it had better be used as a mulch between the rows after planting, not like manure to be plowed under.

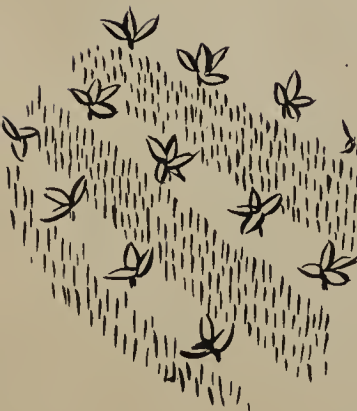
Dried sewage sludge is available in many large cities. Although it contains some minerals, it serves mainly as a source of organic matter. There is a remote danger that sewage sludge contains disease organisms harmful to humans. To guard against any danger of infection, sewage sludge should be plowed or spaded under and not be used as a mulch between rows.

Coal ashes, although they contain neither nutrients nor organic matter, help to loosen up heavy soils.

Wood ashes contain some nutrients, mainly potash. However, they should be used only on soils known to be acid. Wood ashes have the same effect as lime and if spread on soils already too sweet, they will do more harm than good.

USE RYE AS GREEN MANURE:

If no other source of organic matter is available, green manure will serve to maintain the garden soil in good physical condition. Rye sown after August 1 and not later than the end of October helps in several ways. It adds organic matter to the soil, it prevents soil erosion in the winter, and it hinders the leaching of mineral nutrients. You do not need to wait until the entire garden has been cleared in the fall before sowing rye. It may be sown in strips as soon as the crops have been harvested or between rows of late crops. Merely pull up the dead plants, loosen the soil a bit and scratch in the rye with a rake. In the spring, it is turned under after it has grown to a height of a foot or less. If allowed to grow too tall, it will make spading difficult and may also lock up nitrogen in the same way that strawy manure does.



HOW TO USE FERTILIZER:

Except on farms, only one kind of fertilizer will be available for home gardens in 1943. It contains 3% nitrogen, 8% phosphoric acid, and 7% potash. The recommended application is 4-5 pounds per 100 square feet which is equivalent to about 2000 pounds per acre. On heavy soils it is advisable to spread one-half of the fertilizer before plowing or spading and one-half later. If manure has been applied, 2-3 pounds of fertilizer spread after plowing are sufficient. The same quantity of fertilizer should be used when the soil is prepared for second plantings in midsummer.

To spread fertilizer, transfer part of the bag to a pail and spread it with a wide sweep, walking back and forth over the garden area. Gauge your application so that the proper amount is evenly distributed over the entire garden. All fertilizer should be applied before any harrowing or raking is done. Later, it is worked into the soil during the preparation of the seed bed.

Much is being talked about fertilizer placement, that is, putting fertilizer into the furrow made for the seed or in a band close to the row. While this method of application has certain advantages for the commercial grower, it should not be attempted by the home gardener. Any lump of fertilizer coming in contact with a seed is bound to lower germination and injure the seedlings.

WHAT GARDEN TOOLS ARE NEEDED?

The only essential garden tools are: a hand hoe, rake, spade or spading fork, a few stakes and a heavy cord (clothesline). Later a dust gun will be needed to control insects and diseases. Unless you have to spade your garden, do not buy a new spade, but try to borrow one for the few times that it is needed. There is even some question as to whether there will be enough rakes and hoes for the many new gardeners. In a community garden, arrangements should be made for a tool shed from which garden tools can be rented for a small fee. If you share tools with others, remember that it is part of good garden manners to clean tools before they are put away.

Anyone having a garden larger than 50 x 100 feet should make an attempt to get the use of a wheelhoe. With a good wheelhoe, one can cultivate that area in less than one hour, but it would take at least five times as long to cover the same area with a hand hoe.

HOW TO PREPARE THE SEED BED:

In a large garden that has been plowed by team or tractor, the ground is usually broken up by means of a springtooth harrow or disk harrow, followed by a plank-drag or smoothing harrow. On heavy soils it is best to wait a day after plowing to allow the surface to dry out a bit. If small seeds are to be planted, the seed bed may have to be prepared further by means of a hand rake.

In a small garden and in plots that have been spaded, all smoothing operations are done with the rake. Small seeded vegetables, in particular, need a seed bed that has been leveled and in which all lumps larger than 1/2 inch have been broken up. A well-prepared seed bed insures easy planting, good germination of small seeds and an even stand.

Ground to be used for later plantings had best be left rough so as to prevent puddling and the formation of a hard surface crust.

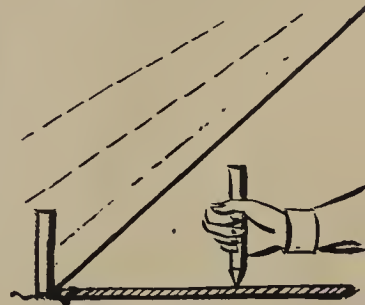
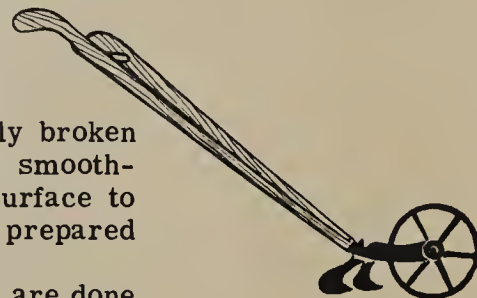
PLANTING AND CULTIVATION

SEED TREATMENT:

All seeds that are to be planted in early spring while the ground is still cold and wet should be treated to prevent "damping off". This is a fungus disease which kills the seedling soon after it has germinated, often before it has broken through the ground. "Spargon", which can be obtained in small packages from any seed dealer, is recommended for treating peas, spinach, lettuce or other vegetables planted early. Take a little spargon powder on the tip of a knife, put it into the seed packet and shake until all seeds are well covered with dust.

MARKING THE ROWS:

Beginning at one edge of the garden, measure off the desired distances between rows at both ends of the garden with a yardstick and mark the rows by driving stakes firmly into the ground. Next, stretch the line tightly between opposite stakes in such a way that the cord touches the ground in its entire length. Stepping with one foot on the line to keep it from shifting and walking backwards, open a furrow with the corner of the hand hoe, using short sweeping strokes. If small seeds are to be planted, you can use the end of the hoe





handle, instead, to make a shallow furrow. It saves time to prepare several furrows at once before planting the seeds. On light soils the plow attachment of a wheelhoe can be used for opening a deep furrow for sweet corn and other large seeds. Be sure to make the furrow always at the same side of the cord, otherwise the distances between rows will be smaller or wider than planned.

How deep the furrow should be depends mainly on the size of the seed and to some extent on soil conditions. On a light or dry soil, plant a little deeper, on a wet, cold, or heavy soil, a little more shallow. Large-sized seeds always are planted deeper than small ones. The following examples may serve as a guide.

1-2"	1"	1/2 - 3/4"	1/2"
peas	cucumbers	beets	carrots
beans	muskmelons	Swiss chard	kale
onion sets	squash		lettuce
	sweet corn		radishes

SOWING SEED:

The most important rule about sowing is to use as little seed as possible. Many gardeners think that thick sowing insures a good stand. Actually, an uneven stand is usually due to poor seed bed preparation, wet and cold weather, too deep or too shallow planting, or failure to treat seeds. Too thick a stand is almost as bad as having many weeds in the row; moreover, it wastes seed badly needed by others. Most seeds, peas, carrots, spinach, beets, radishes and lettuce, for instance, should be sown at the rate of two seeds per inch of row. Snap bean seeds are spaced 2 or 3" apart, lima beans 3-4". Sweet corn, if planted in rows, may be planted 6" apart and later the plants are thinned to a distance of 12". Many gardeners make the mistake of sowing lettuce, carrots, radishes and spinach too thickly. The result is that they have to do much extra labor in thinning later on.

Small seeds may be sown by taking a small portion into the hand and rubbing it out between thumb and forefinger while the hand moves swiftly over the furrow. Others prefer to shake the seed out of the packet by tapping the edge of the packet lightly with the index finger. Whichever method you use, make sure that the seed is not dropped from a height of more than a few inches, otherwise the wind is likely to blow the seed beyond the furrow.

Large seeds, such as corn and beans are dropped one by one into the furrow, taking pains to space the seeds evenly.

COVERING AND LABELING THE ROWS:

After the seed has been dropped into the furrow, close the furrow by scraping the soil back into place. This can be done quickly with a rake or with the hoe, using long strokes. It is of advantage to have a slight ridge of 1/4" left above the furrow, let us say. The ridge marks the row and makes it possible to start cultivating before the seeds have come up. This practice is recommended especially for parsnips, carrots, and other seeds which require a long time to germinate.

The last step in planting is to label the rows. At the end of each row, place a label indicating the kind of vegetable planted. If you wish, you can put down the planting date, variety used, or any other information you care to have later.

WHAT VEGETABLES TO PLANT IN HILLS:

Only cucumbers, summer and winter squash, melons under hotcaps, and pole beans need to be planted in hills. It makes little difference whether sweet corn is planted in hills or rows. To make a hill, mark your rows with a cord, step off the proper distances along the row, scrape a little soil to one side with a hand hoe, drop 5 or 6 seeds so that they are at least 1/2 inch apart and scrape the soil back into the place. Leave a little mound over each hill not higher than is necessary to indicate the spot where the seeds have been planted.

DO NOT TRY TO PLANT THE ENTIRE GARDEN IN ONE WEEK:

Following closely the planting schedule given earlier has several advantages: it spreads the work of planting over the entire season, it avoids the danger of injury to tender plants by a late frost, and it assures best growing conditions for each crop, and assures a steady supply of vegetables for the table.

Watch closely the ground that is to be planted later in May or early June. As soon as the

first weeds break through the ground, destroy them with a wheelhoe, rake or hand hoe. Always prepare the ground by hoeing or raking before the next planting is made.

WHAT VEGETABLES TO SET OUT AS PLANTS:

The following vegetables are nearly always transplanted:

early cabbage
broccoli
tomatoes

peppers
eggplants



These crops require a long growing season and in order to have them mature early, they are started in a greenhouse, hotbed, or coldframe. Plants in this group are usually sold in flats by local plant growers.

Lettuce, beets, and Sweet Spanish onions are frequently started under glass so as to have them produce a few weeks earlier. Onion plants may be obtained from most seed houses; beets and lettuce plants may be difficult to get in some localities.

A third group of plants; late cabbage (including red cabbage), late broccoli, and cauliflower are usually started in a seed bed outdoors. They are grown close together and after they have reached several inches in height, they are pulled up and set out in rows at the proper distance not later than early July. Plants of this type can usually be obtained locally. A gardener may want to grow his own plants, but if he does, he should know how to guard against cabbage maggots and other pests.

HOW TO TRANSPLANT:

When buying plants, see to it that you get well-hardened, stocky plants; tall, spindly ones are likely to suffer from excessive heat or cold weather. If you have to hold the plants for a few days, keep them in a light place but water them sparingly. If possible, the plants should be exposed to the full sunlight for one or two days prior to transplanting.

The first step in transplanting is to block out the plants. With a heavy knife, cut between the rows, both lengthwise and crosswise so that each plant can be lifted out with a block of soil attached. Transfer each plant immediately from the flat to the hole dug previously with a trowel or shovel. Handle the plants by taking hold of the block of soil, not the plants themselves. Pour a cupful of water into the hole as the plants are set. This will bring the roots into close contact with the soil and put the moisture where it is most needed. Set the plants a trifle lower than they had been growing in the flat. Finally, pack the soil tightly around the roots and draw loose soil over the surface.



A FEW SAFEGUARDS IN TRANSPLANTING:

During hot, dry weather, the transplants should be shaded during the hottest part of the day by covering them with inverted baskets or newspaper tents. Keeping the plants covered all day is harmful because sunlight is needed for making food to replace the roots that have been lost during transplanting.

Never prune or break off roots and leaves before or after transplanting. Even the wilted and yellow dying leaves help the plant to overcome the shock of transplanting.

On sandy soils where cutworms or cabbage maggots are troublesome, transplants should be protected by paper shields to prevent the maggot from laying its eggs in the soil close to the plant. Take a piece of paper 3-4 inches long and wide, cut a slit from the outer edge to the center, enlarge the center hole a bit and slip the shield around each newly set plant.



STARTING TENDER PLANTS UNDER HOTCAPS:

Hotcaps serve as miniature greenhouses in the garden. They are made of translucent, waxed paper and cost two or more cents, depending on their size.

Hotcaps may be used for starting tender plants, such as muskmelons, cucumbers and summer squash before danger of a late frost has passed. Hotcaps may be used for tender crops regardless of whether they are seeded or transplanted.

Seed is sown in hills, then the cap is placed over the hill and the paper flange is buried into the soil to keep the cap in place. After the plants have developed several leaves and the danger of frost has passed, a small hole is cut into the top of the cap to provide ventilation and to harden the plants. Pyrethrum dust should be blown into this hole because cucumber beetles and other insects find their way through the smallest openings. Finally, as the plants become crowded, the hole is enlarged and a week later the cap is removed altogether.



GARDEN CARE

WEED CONTROL:

The easiest way to keep weeds under control is to destroy them before they get a start. If you can recognize the rows where seed has been planted, start cultivating or hoeing before the crop plants have come up. As long as the weeds are at a stage where they have just germinated, they can be destroyed by raking the soil between the rows. In this way thousands of weeds can be killed in a few minutes, but it would take hours to get rid of them a week or two later. If you have a wheelhoe, use the knife attachment and cut off a thin layer of surface soil, not thicker than 1/2 inch, keeping the knife close to the rows of crop plants. Instead of a wheelhoe, you can use a rake if the soil is loose enough, otherwise, take the hand hoe and scrape the top of the soil. This should be repeated several times until the crop plants are tall enough to shade the ground almost entirely. While weeding between the rows, do not neglect that part of the garden which is to be planted later. It is almost impossible to make a good seed bed out of land where weeds have taken hold.

Many gardens are infested with quack grass. Some of the roots can be pulled out with the harrow after plowing. They should be raked together and taken off the land before they take a new hold in the soil. To eradicate quack grass completely, cut off the new shoots every few days. Eventually - it may take several weeks - the roots become starved and die.

ONCE THE SEEDLINGS HAVE COME UP:

After the seedlings have broken through the ground and have grown an inch or two in height, they may need thinning. Crops which nearly always have to be thinned are:

carrots
beets
leaf lettuce

parsnips
radishes
rutabagas

kale
endive
head lettuce

Thinning can be done only the hard way. Get down on your hands and knees, straddling one row at a time, pull up the plants not needed. Pull up enough plants to give the remaining ones plenty of space to grow. Carrots and beets may be left fairly thick at first, later they can be thinned by pulling every other root when they are big enough to be eaten.

Rutabagas, kale and head lettuce should be spaced a foot or more apart. Rather than pull up most of the plants by hand, use a hoe and cut 1-inch strips out of each row, leaving a bunch of 2-4 plants which then can be thinned by hand in a short time.

While thinning the plants, all weeds close to the crop plants should be destroyed. With a small hoe one can work up to within 1/2 inch of the plants. Weeds still closer to the row have to be pulled by hand.

Later, as the plants approach maturity, keep close watch for tall pigweeds, false mustard and other weeds which may have escaped other weeding. Be sure they are pulled up before they have a chance to mature and spread their seeds.

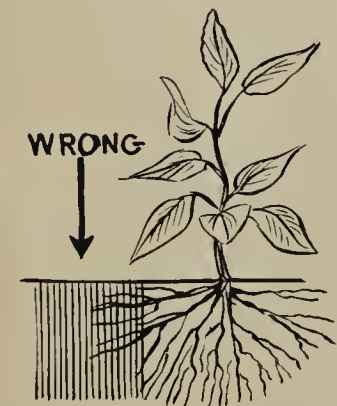
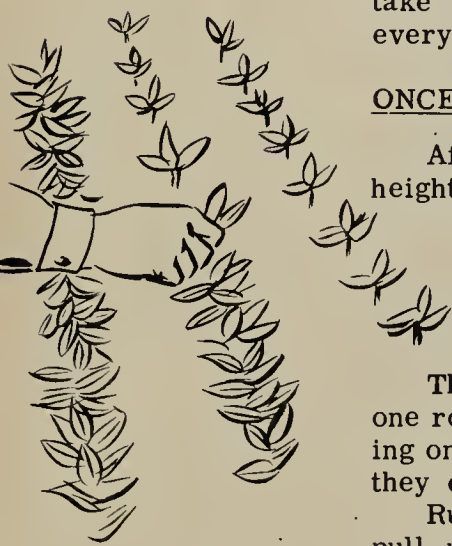
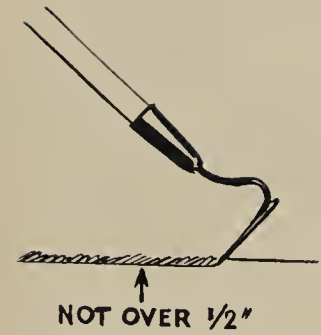
As soon as all vegetables from one row have been harvested, pull up the remaining plants, clear the ground with a wheelhoe or hand hoe and loosen up the soil to prepare a seed bed for the next planting. Later in the summer or fall do the same and sow rye if it is too late to grow more crop plants. Rows abandoned in midsummer or early fall are likely to be the source of next year's weed crop.

WHY CULTIVATE?

Cultivation, that is, loosening the soil up to a depth of 2 inches, has no virtue in itself. Contrary to common belief, stirring the soil before or after a rain does not necessarily preserve soil moisture; nor is a deep "dust mulch" effective in preventing moisture losses from the soil. It has been shown repeatedly in experiments that plots which had merely their surface scraped to prevent weed growth retained as much water as adjoining plots which were cultivated frequently.

Deep cultivation close to the rows is distinctly harmful. It cuts off many of the shallow feeder roots, and it is a mistake to think that by pruning the shallow roots those farther down grow that much better.

The main benefit from cultivation, therefore, is weed control. The shallower the ground is cultivated, the better the results will be. In a large garden, use the knife attachment of



the wheelhoe and run it close to both sides of each row. In a small garden scrape the ground with a hand hoe just deep enough to cut off all the weed plants.

The only time when deeper cultivating is justified is on heavy clay soils a day or two after a heavy rain. To prevent baking of the soil into a brick-like crust, you may cultivate to a depth of 2 inches, but in doing so, keep several inches away from the rows so as not to cut off any feeder roots.

HOW TO PRESERVE SOIL MOISTURE:

The most effective method of preserving soil moisture is to destroy weeds while still small. Every weed robs the adjoining crop plant of needed water and nutrients.

Another means of saving moisture in the soil is to spread a mulch between the rows. Paper mulch is effective, but probably it cannot be bought any longer. Other good mulching materials are leaves, straw, peat moss, grass from the lawn, or strawy manure. Apply strawy materials 3-4 inches thick, compost or similar materials one-half this depth. It is best to apply the mulch after the first cultivation. Once the mulch has been spread, no further weeding is needed because the mulch smothers the young weed seedlings. Mulching has two disadvantages: It provides cover for mice and if weeds do come through the mulch they have to be pulled.

Mulching is especially recommended for tomatoes. Spread soon after the plants are set, it greatly reduces blossom-end rot of the fruits, a disorder caused by fluctuations in soil moisture. Also, the mulch keeps the fruits off the ground, a big advantage in wet weather.

HOW MUCH DOES IT HELP TO WATER THE GARDEN?

If you have a good supply of water, it may pay to water the garden if no soaking rain has fallen for a week or 10 days. To be of any value, enough water must be applied to soak the ground to a depth of 5 or 6 inches, that means an average of 2/3 gallon to each square foot of garden space.

Sprinkling the garden with a hose for a short time does more harm than good. It merely stimulates the growth of shallow roots which a few hours later have no more water to draw on.

The best way to water the garden is to use an automatic sprinkler which should be left on the same spot for two or three hours. You can also run the garden hose with spray nozzle through the hand hole of the spade which is stuck firmly into the ground. Spray in the same direction until the soil has been soaked thoroughly.

HOW TO FIGHT INSECTS IN THE GARDEN:

The trouble with insects is that they frequently have done their damage before their presence has been discovered. It pays to inspect all plantings every few days to see whether there are signs of damage.

Some of the worst insects that need close watching are cutworms on sandy soils, green cabbage worms, and loopers, Mexican bean beetles, and cucumber beetles on squash, melons, and cucumbers.

In the home garden insects are best controlled by dusting. An all-metal plunger-type dust gun with a large reservoir is recommended. In a pinch you may dust your plants by shaking it out of a bag made of several layers of cheesecloth. The disadvantage of this method is that the dust does not reach the underside of the leaves where many of the insects such as Mexican bean beetles hide.

In a small garden most insects can be controlled by hand picking and trapping. Some insects, cutworms and squash bugs like to hide under shelter near the plants. A few shingles and boards placed near the plants will attract them during the night and they can easily be caught the next morning. Tomato worms, cabbage worms and loopers can be picked off the underside of the leaves if they are not too plentiful. Using salt to kill these insects is ineffective and may cause severe damage to the plants. Soap suds may be used to kill aphids or plant lice on young cabbage or tomato plants.

MATERIALS FOR DUSTING:

Rotenone is one of the best materials to control insects. The supply is short and home gardeners will be permitted to use it on certain, specified crops only. Even pyrethrum dusts, such as "Pyrocide" may be difficult to get and should be used sparingly. Pyrethrum dusts are effective in fighting many kinds of insects. In using it, make sure the dust reaches the underside of the leaves. Early morning, after a heavy dew, when there is no wind is the best time to dust.



DUST THE
UNDERSIDE

Lead or calcium arsenate may be used to control flea beetles and other insects on small, immature plants. Remember always that these materials are extremely poisonous to humans and should be kept away from any parts of plants that will be eaten eventually.

To control insects and diseases on potatoes and melons, specially prepared dust mixtures can be bought from a fertilizer or feed dealer.

NOTES ON SOME INDIVIDUAL VEGETABLES

ASPARAGUS:

Asparagus is a perennial which should not be harvested for 2 years after the roots have been planted. Anyone who wants to start an asparagus bed had best obtain a bulletin describing, in detail, methods of culture.

To keep an asparagus bed clean, remove all dead tops from the previous season early in spring. As soon as the ground is dry enough, cover the entire area with wheelhoe or hand hoe, making sure all weed plants are destroyed. Never mind the few spears you may cut off; new ones will appear a day or two later. Do not let the spears grow higher than 10 or 12 inches. If you cannot use all, give some to your neighbors. During the cutting season, cut off all plant growth every two weeks as was done early in spring. This keeps weeds under control and reduces damage from asparagus beetles.

Stop cutting early in July. Weed the area thoroughly once more, then let the plants grow up to make reserve food for next year's crop.

The main virtue of asparagus in the home garden is that it starts producing 3 or 4 weeks before other crops are ready.

SNAP BEANS:

Bush beans produce much food per square foot in the garden. Repeated plantings should be made because one planting seldom yields for more than 2 weeks.

To save space in a small garden, pole beans are recommended, provided you can obtain enough poles 8-10 feet long. Pole beans, if picked while young, are more tender than most varieties of bush beans and yield several times as much per square foot. Also, pole beans keep on yielding until the frost kills the vines. Watch all types of beans for bean beetles!

BEETS:

Early beets should be ready to harvest in June. Both roots and tops may be eaten. Late beets should not be sown before the middle of July, otherwise the roots become hard and tough. Unless you have good storage facilities, do not grow too many fall beets. In a poor storage they shrivel rapidly.

BROCCOLI:

Broccoli is one of the most nutritious vegetables. It yields over a period of about two months. Two plantings are recommended, one in early spring and one in midsummer. Harvest broccoli before the yellow flowers appear. If the blossom buds are kept trimmed, new, but smaller ones continue to develop for many weeks. Broccoli is very hardy; usually the plants are not killed until early in November. In order to keep worms under control frequent dustings are necessary.

CABBAGE:

Only early varieties should be used for spring plantings. The plants can be made to yield two crops. After the first head has been cut off, new buds appear near the top of the remaining stump. Cut off all but one. The remaining one will grow into another head of fair size within a few weeks.

For winter storage, gardeners should grow not only the white Danish type but also red and Savoy cabbage. These two kinds have a distinctive taste, keep fairly well in storage and add to the variety on the dinner table in winter.

CHINESE CABBAGE:

Chinese cabbage is little known but deserves more attention because of its delicate fla-

vor and good storage qualities. It should not be sown until the middle of July. The plants are thinned to about 10 inches. The slender heads are harvested until frost.

ENDIVE:

Endive is disliked by many because of its bitter taste. This bitterness can easily be removed by blanching. Thin the plants so that they stand a foot apart. When the plants are nearly large enough to eat, draw the outer leaves over the head and tie them together with a string. This can also be done by covering the heart of the head with a berry box. Two or three weeks later the heads are blanched and most of the bitter taste will have disappeared.

KALE:

Kale may be grown as a spring crop, but it is best late in the fall and early winter. It is the hardiest of all vegetables and with a little cover of mulch or snow it may last until January.

Next to turnip greens, kale is probably the most nutritious of all vegetables, having a high content of calcium, carotene and vitamin C. In harvesting kale, pick a few of the inner leaves from several plants, leaving the growing point in the center and the coarse outer leaves.

KOHLRABI:

Kohlrabi is thinned to about two plants per foot. It should be harvested when nearly two inches in diameter. Later, it becomes hard and woody. Kohlrabi keeps well in storage.

LETTUCE:

Leaf lettuce may be grown all summer. Plants should not be crowded in the row but be spaced 6 or 8 inches apart.

Head lettuce can be grown successfully in the cooler parts of the State, provided it is planted early or late in the season so that the heads do not mature during July or August. Imperial 44 is one of the best heading varieties. Space the plants 12-16" apart in the row.

ONIONS:

Onions may be grown from sets or plants. If sown directly into the ground, bulbs of fair size are obtained only if the seeding can be made before May 1.

Young onion plants ready to be transplanted can be bought from seed houses or growers. Space them about two inches apart and pull every second one for green onions before they become crowded.

Onion sets (dry small onions) do not need to be planted before May. Set them with the root end downward about two inches deep and three inches apart.

RADISHES:

Beginners usually plant many more radishes than they can eat. To save space, they may be intersown with parsnips and carrots. Because radish seed germinates quickly, this practice helps to mark the rows of parsnips and carrots for early cultivation.

POTATOES:

Because they are subject to several insect and disease pests, potatoes are difficult to grow. Specially mixed dusts for treating potatoes can be bought from fertilizer dealers.

RUTABAGAS:

Rutabagas should not be sown until early June. They are thinned to about 12 inches. Rutabagas cannot be transplanted. In a good storage they will keep until spring.

SWISS CHARD:

On a minimum of space Swiss chard yields plenty of nutritious greens throughout the summer. The leaves are cut an inch above ground or merely pulled off. Within a few weeks another crop will be ready. If there is more chard than the family can use, cut the plants back occasionally so that young, tender leaves develop.

SUMMER SQUASH:

Two hills of summer squash furnish all the fruits that a family of four can use. Pick the fruits while still small and tender. Large squashes left on the plant prevent the young ones from developing.

TOMATOES:

To have enough for salads and canning, set out 12 or 13 plants for each person in the family. They are spaced about 3 x 4 feet if allowed to grow on the ground, or 2 x 3 feet if pruned and staked. Because the yield per plant is greatly reduced by pruning, the total yield per given area is only slightly larger from staked tomatoes than from unstaked ones. Victor tomatoes, because they have a "determinate" growth, cannot be trained to a stake.

HOME STORAGE OF VEGETABLES

ADVANTAGES OF COMMON STORAGE:

Common storage in the cellar or in an outdoor pit is the easiest way to keep many kinds of vegetables until spring. Under proper storage conditions, losses in food value and flavor are small. Because common storage involves little expense and labor, it is the best method of preserving root vegetables and those crops which are not highly perishable.

PRINCIPLE OF SUCCESSFUL STORAGE:

Vegetables put in storage are still living parts of plants; they breathe, give off water, and are subject to breakdown by decay organisms. Eventually, these processes lead to the spoilage of stored vegetables but ultimate breakdown can be postponed several months by keeping the storage temperature slightly above the freezing point and by maintaining the humidity close to saturation. Only onions and squash require a dry atmosphere for storage.

WHEN TO PLANT VEGETABLES FOR STORAGE:

The proper planting dates for some storage crops are different from those recommended for fresh summer vegetables. For Central and Western New York the recommended dates for planting storage vegetables are as follows:

May 1	June 1	July 1	July 15
Parsnips	Winter squash	Carrots	Beets
Salsify	Rutabagas	Danish cabbage*	Turnips
Onions		Red cabbage*	Kohlrabi
		Savoy cabbage*	Chinese cabbage

*Date for setting plants. Unless you buy your cabbage plants, sow seed 6 weeks earlier.

HARVESTING TIME AND PREPARATION FOR STORAGE:

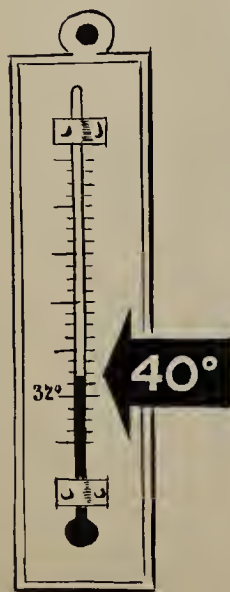
If vegetables fail to keep well in storage, it is usually because they were harvested too early. During late fall most crops, especially the root vegetables, keep much better in the garden than in a warm storage cellar. Only squash and onions must be harvested before the first killing frost, all others had better be left outdoors until the beginning of November.

Vegetables should not be washed before they are stored. In fact, the dirt clinging to the root crops helps to delay shriveling. However, the dirt should be allowed to dry somewhat before storing.

It is necessary, however, to sort and trim vegetables, especially cabbage, to remove all decaying parts. A small disease spot spreads rapidly in storage and infects other sound produce.

CELLAR STORAGE:

House cellars do not make a satisfactory storage place unless a corner is partitioned off and the inside walls are well insulated against the heat from the furnace. An average temperature of 40° F. or less must be maintained, otherwise the vegetables are bound to spoil



quickly. The storage room should have a screened window so that the cool outdoor air can enter. In the fall, open the window whenever the outdoor temperature is below that of the storage room. Later, regulate ventilation so that an even temperature of 35 to 40° is maintained. In a dry storage room shriveling of the vegetables can be prevented by packing them into crocks or barrels together with damp leaves or moist sand.

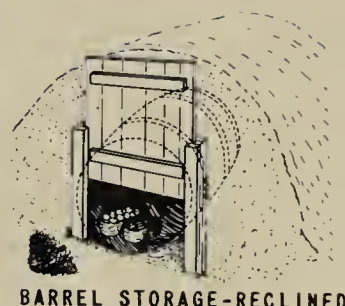
Onions and squash require dry storage. A cool, but frost-proof attic room usually provides ideal storage conditions for these crops.

OUTDOOR STORAGE:

The simplest and most satisfactory outdoor storage is a tight barrel or metal drum buried vertically into the ground with the upper rim protruding 1-2 inches. The vegetables to be stored are mixed, some damp leaves are added and put into the barrel. The top is covered with a wooden lid. In zero weather a layer of mulching material should be spread over the top. This type of storage is accessible throughout the winter except during severe weather or when covered by a snow drift.

On a hillside it may be more convenient to bury the barrel horizontally. The opening should be fitted with a sliding cover. To prevent freezing injury, straw or leaves should be piled in front of the opening.

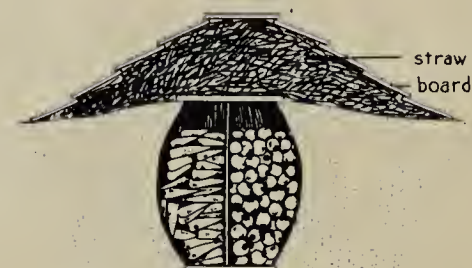
An outdoor pit is easy to build but is inaccessible as long as the ground is frozen hard. A shallow pit, about a foot deep is dug into the ground, the bottom and sides are lined with straw and crates or boxes containing the vegetables are piled into the pit. A layer of straw or leaves and a soil cover 6-12 inches thick will protect the vegetables against freezing. A drainage ditch 1-1/2 feet deep must be dug around the pit to prevent water from seeping in during a midwinter thaw.



BARREL STORAGE-RECLINED

RECOMMENDED VARIETIES

CROP	VITAMINS Percentage of your daily requirements supplied by an av- erage serving.				VARIETIES Arranged in order of usual preference. Since the seed supply of some of these is rather short, other varieties may have to be substituted.
	Caro- tene A	Thia- mine B ₁	Ascor- bic acid C	Ribo- flavin B ₂	
Beans, green snap	20	5	20	5	Tendergreen, Stringless Green Pod, Bountiful Pencil Pod, Kidney Wax, Sure Crop Crosby, Early Wonder, Detroit Dark Red Italian Green Sprouting
Beans, yellow snap	10	5	20	5	
Beet greens	300		70	18	
Beets	5	3	10	1	
Broccoli	180	7	100	9	
Cabbage, early or kraut	10	5	80	3	Copenhagen, Golden Acre, Glory Danish, Red Rock Red Core Chantenay, Nantes, Danvers Fordhook, Lucullus Spanscross 4-13, North Star, Seneca 60-13
Cabbage, late	10	5	80	3	
Carrots	42	4	7	2	
Chard	180		50	3	
Corn, extra early	20	20	15	5	
Corn, early	20	20	15	5	Marcross 13-8, Northern Cross Seneca Golden, Carmel Cross, Lincoln Golden Cross Deep Heart, Green Curled, White Curled Dwarf Green Curled
Corn, midseason	20	20	15	5	
Corn, late	20	20	15	5	
Endive	80	8	18	5	
Kale	400	10	170	40	
Kohlrabi		4	80		White Vienna, Purple Vienna Simpson, Prize Head, Grand Rapids Imperial 44, May King Sweet Spanish Ebenezer, Yellow Globe
Lettuce, leaf	80	5	20	4	
Lettuce, head	5	5	10	2	
Onions, from plants		2	10	4	
Onions, from sets		2	10	4	
Parsley	2		2		Moss Curled Model, Hollow Crown World Record, Early Gradus, Little Marvel Laxton Progress, Thomas Laxton, Morse Market Stratagem, Dwarf Alderman
Parsnips		8	30		
Peas, early	20	28	35	8	
Peas, midseason	20	28	35	8	
Peas, late	20	28	35	8	
Peppers	70	2	150	4	Windsor A, King of the North, California Wonder Early Scarlet Globe, Sparkler, White Icicle Giant Green, Jogun, Hokkaido Long Standing Bloomsdale, King of Denmark Yankee Hybrid, Straightneck, Cocozelle
Radishes		2	8	1	
Soybeans	15	30	55	11	
Spinach	500	8	100	15	
Squash, summer	20	3	5	2	
Squash, winter	80	3	7	3	Delicious, Buttercup, Hubbard, Table Queen Earliana, Victor John Baer or Bonny Best, Pritchard, Stokesdale Rutgers, Marglobe Shogoin, Purple Top White Globe Purple Top White Globe, Golden Ball
Tomatoes, early	20	5	30	2	
Tomatoes, main crop	20	5	30	2	
Tomatoes, late	20	5	30	2	
Turnip greens	200	8	200	10	
Turnips	2	2	40	1	
Asparagus	10	10	40	4	Mary Washington Newburgh, Taylor, June Linneaus or Strawberry, Victoria Premier, Catskill, Fairfax
Raspberries (Red)	8	2	40		
Rhubarb	2	1	27		
Strawberries	1		70		
Beans, bush lima	10	23	2	12	Fordhook, Henderson, Baby Fordhook Long Island Improved Improved Erfurt, Super Snowball Summer Pascal, Salt Lake Chihli
Brussels sprouts	4	12	80		
Cauliflower	1	10	100	4	
Celery, green	10	2	7	1	
Chinese cabbage	20	4	25	1	



BARREL STORAGE-UPRIGHT



OUTDOOR PIT



SPECIAL STORAGE FOR PARSNIPS AND SALSIFY

